

## C L A I M S

1. (Amended) A vacuum processing apparatus comprising:

a vacuum processing chamber having a stage mounting a substrate to be processed; and

a carrier port provided on a peripheral wall of the vacuum processing chamber, and carrying the substrate onto and off the stage, for generating plasma in the vacuum processing chamber and for subjecting the substrate on the stage to a plasma processing, characterized by comprising:

a shutter having a heating mechanism, retreated when the substrate is delivered onto and off the stage, and disposed to cover a surrounding of the stage and to surround a plasma generation region while closing the carrier port when the plasma is generated in the vacuum processing chamber, to thereby prevent the plasma from being disordered.

2. (Amended) A vacuum processing apparatus according to claim 1, characterized in that

the shutter is a cylindrical member along an inner peripheral wall of the vacuum processing chamber, the shutter raised by a shutter driving mechanism to close the carrier port when the plasma is generated in the vacuum processing chamber.

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3. (Amended) A vacuum processing apparatus  
according to claim 2, characterized in that

the shutter driving mechanism is constituted of an  
air cylinder disposed on an atmospheric area side, and  
5 a driving shaft elevated by the air cylinder to elevate  
the shutter.

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4. (Amended) A vacuum processing apparatus according to claim 1, characterized in that

the shutter is a plate member along an inner peripheral wall of the vacuum processing chamber, the shutter raised by a shutter driving mechanism to close the carrier port when the plasma is generated in the vacuum processing chamber.

5. (Amended) A vacuum processing apparatus  
according to claim 3, characterized in that

the shutter driving mechanism is constituted of the air cylinder disposed on the atmospheric area side, and the driving shaft elevated by the air cylinder and elevating the shutter.

6. (Amended) A vacuum processing apparatus according to claim 1, characterized in that a potential of the shutter is grounded.

8. (Amended) A vacuum processing apparatus, comprising; a vacuum processing chamber having a stage mounting a substrate to be processed; and a carrier port provided on a peripheral wall of the vacuum processing chamber, and carrying the substrate onto and off the stage, for generating plasma in the vacuum processing chamber and for subjecting the substrate on the stage to a plasma processing, characterized by comprising:

a deposit shield disposed along an inner peripheral wall of the vacuum processing chamber; and

a shutter disposed to be able to be elevated along the inner peripheral wall of the vacuum processing chamber, and characterized in that

each of the deposit shield and the shutter has a grounded potential, the shutter is retreated when the substrate is delivered into and outside through the carrier port and displaced to be abutted on the deposit shield when the plasma processing is conducted, and a plasma generation region is surrounded by an even curve, thereby generating uniform plasma.

8. (Amended) A vacuum processing apparatus  
according to claim 7, characterized in that

the shutter is a cylindrical member along the inner peripheral wall of the vacuum processing chamber, the shutter raised by a shutter driving mechanism to close the carrier port when the plasma is generated in the vacuum processing chamber.

9. (Amended) A vacuum processing apparatus according to claim 7, characterized in that

the shutter is a plate member along the inner peripheral wall of the vacuum processing chamber, and the deposit shield is a cylindrical member having a notch portion facing the carrier port; and

when the plasma is generated in the vacuum processing chamber, the shutter is fitted into the notch portion by a shutter driving mechanism to close the carrier port.

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the end face is formed to have a flat surface, a groove for fitting an O ring thereinto is formed on the stage side, and a groove for fitting a spiral seal made of metal thereinto is formed on an outer periphery on the groove; and

11. (Amended) A vacuum processing apparatus  
according to claim 7, characterized in that

on an end face of the shutter on the deposit shield side, the end face is formed to have an L-shape to be engaged with an end face of the notch portion so as to have a convex outer periphery on the end face of the shutter; and

a groove for fitting a spiral seal made of metal thereinto is formed on the end face of the convex portion of the shutter is formed, and when the processing is conducted, a concave portion of the deposit shield and the convex portion of the shutter are electrically connected to each other through the spiral seal.

12.) (Amended) A vacuum processing apparatus

**A**

**B**

**C**

**D**

**E**

**F**

**G**

**H**

**I**

**J**

**K**

**L**

**M**

**N**

**O**

**P**

**Q**

**R**

**S**

**T**

**U**

**V**

**W**

**X**

**Y**

**Z**

[illegible]

15. (Added) A vacuum processing apparatus including a vacuum processing chamber having a stage mounting a substrate to be processed; and a carrier port for carrying the substrate onto and off the stage, for generating plasma in the vacuum processing chamber and for subjecting the substrate on the stage to a plasma processing, characterized by comprising:

a deposit shield disposed along an inner peripheral wall of the vacuum processing chamber, and having a notch portion at a position facing the carrier port; and

a shutter having a shape fitted into the notch portion of the deposit shield, having an inside forming a same curve as a curve of an inner surface of the deposit shield when the shutter is fitted into the notch portion, and disposed to be able to be elevated, and characterized in that

each of the deposit shield and the shutter has a ground potential, the shutter is retreated to pass through the notch portion to carry the substrate when carrying the substrate inside and outside through the carrier port, the shutter is displaced to be fitted into the notch portion of the deposit shield when the plasma processing is conducted, and a plasma generation region is surrounded by the even curve, thereby producing uniform plasma.

16. (Added) A vacuum processing apparatus according

Figure 1. The 12 ECGs of the patient with the diagnosis of aortic dissection. The ECGs were recorded at 10-min intervals. The first ECG (a) was recorded at the time of the patient's admission to the hospital. The subsequent ECGs (b-l) were recorded at 10-min intervals. The ECGs show a normal sinus rhythm with a heart rate of 60-70 bpm. The QRS complex is narrow and the ST segment is depressed. The T wave is inverted. The ECGs are consistent with a diagnosis of aortic dissection.



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to claim 15, characterized in that

when the plasma is generated in the vacuum processing chamber, the shutter is raised by a shutter mechanism to be fitted into the notch portion to thereby close the carrier port and an inner surface of the shutter forms the same curve as the curve of the inner surface of the deposit shield.

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